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Engineering



Allis-Chalmers

Manufacturing Company

MINING MACHINERY DEPARTMENT

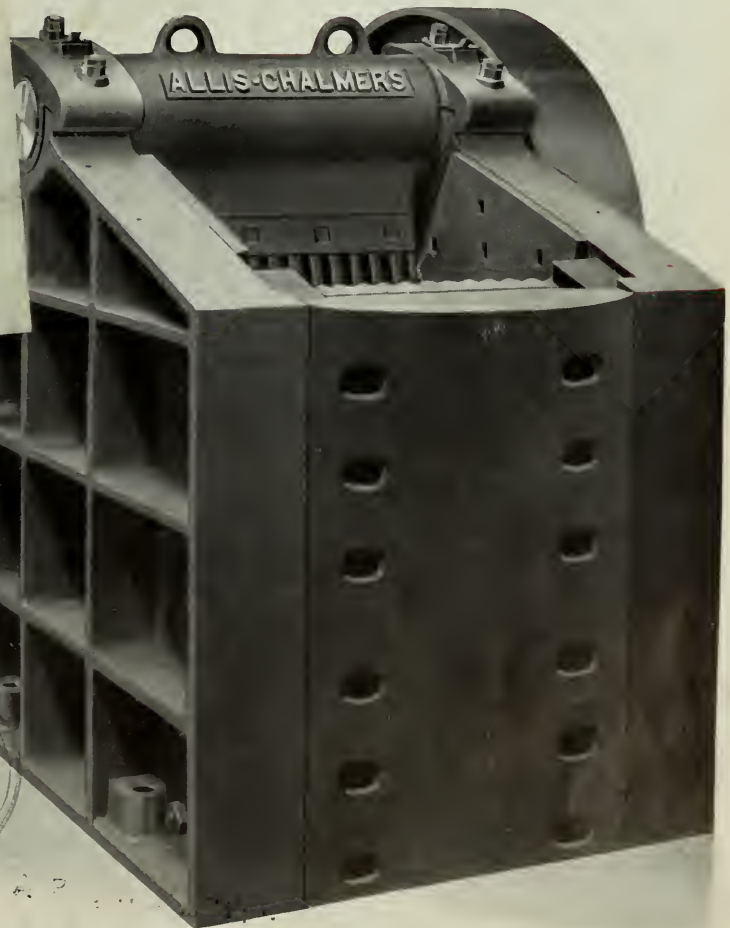
Bulletin No. 1810

June, 1916

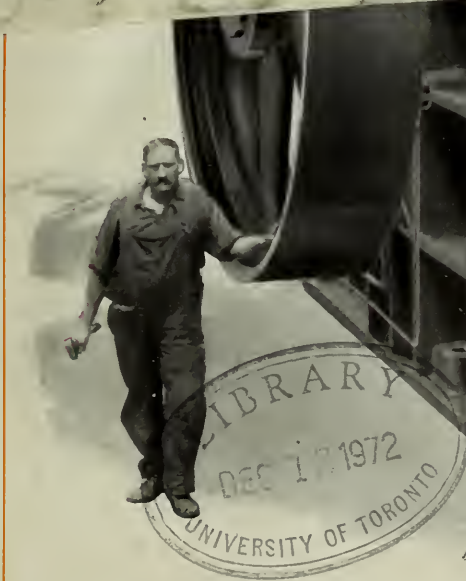
ALL STEEL JAW CRUSHER

Plate No. 12115

Catalog No. 124
Year of Issue 1916
Please return to
Section No. A6-3
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Department of Mining Engineering



Front View



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MILWAUKEE, WISCONSIN, U. S. A.

By Allis-Chalmers Mfg. Co.

Allis-Chalmers Manufacturing Company

JAW CRUSHERS

In modern stone quarries and in surface mining operations, the steam shovel has been the means of reducing labor and increasing capacity, making it possible to remove large masses of material which could not be handled in the days of light machinery and hand labor. The result has been a demand for large crushers capable of reducing the largest rocks which can be handled by the steam shovel.

After a careful study of these conditions, and with the knowledge gained from years of experience in manufacturing crushing machinery to guide us, we have designed the ALL STEEL JAW CRUSHER. This crusher, as the name implies, is made entirely of steel with the exception of a few parts not subjected to severe stresses, and is so designed that exceptional rigidity is secured.

The All Steel Jaw Crusher, as herein described, is manufactured in three standard sizes, viz., 36" x 24", 48" x 36" and 60" x 48" and we have found that these sizes cover the average requirements.

Blocks of material of the maximum size of the receiving opening can be easily and rapidly reduced without creating excessive strains in any part of the crusher. Both stationary and movable jaws are inclined about 12° from the vertical, decreasing the deflection which large pieces have to take when fed into the mouth opening and insuring a better grip on the material to be crushed.

Where the requirements are such that a larger and more powerful crusher is necessary, we furnish the 84" x 66" All Steel, Vertical Swing Jaw Crusher illustrated on pages 6 and 7. This crusher is similar to the smaller crushers in general design, except that the swing jaw is vertical and the stationary jaw, inclined about 25°, thus further reducing the deflection required for large pieces entering the jaws.

The frame is of the built-up type, made of four cast steel ribbed sections, two sides and two ends. The section joints are accurately machined to insure perfect alignment, and are securely held together by turned bolts, practically making one casting. On account of the length of the frame it is necessary to provide against spreading or deflection of the side frames, and we have therefore provided a cast steel tie-rail to connect the two side castings at a point between the swing jaw and pitman shaft bearings. Spreader bolts are also used to hold the frame securely in position.

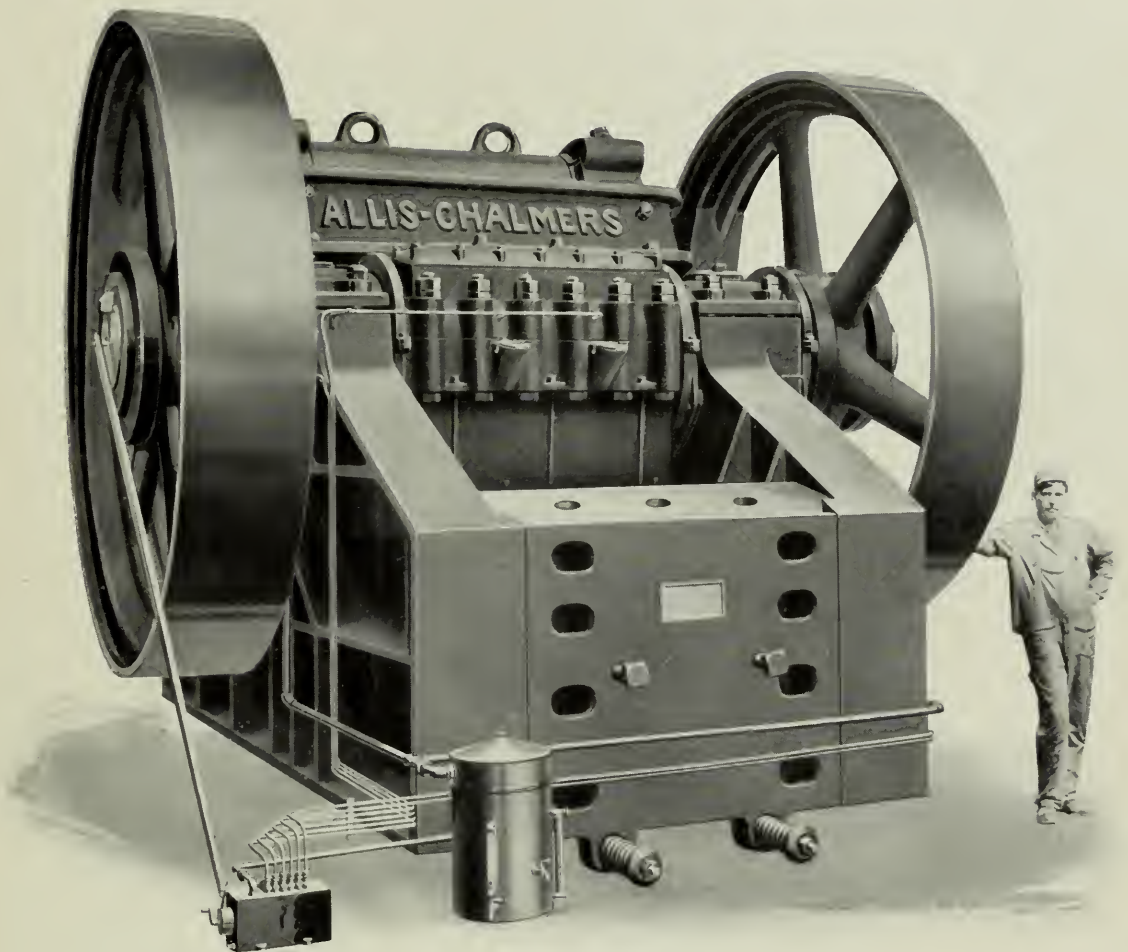
The lower half of the bearings for the pitman and swing jaw shaft are cast integral with the frame, being machined to receive removable wearing liners or bushings and fitted with caps.

The swing jaw is made of cast steel of heavy ribbed section, machine bored for the swing shaft, which is pressed in same and also machined for the jaw plates and toggle seat.

The pitman is made of cast steel of box-section with internal ribs, pitman being made with removable cap to facilitate handling and rebabbiting.

JAW CRUSHERS

Plate No. 12113



Rear View

The pitman and swing jaw shafts are made of best quality forged steel, heat treated and oil tempered.

The jaw and side plates are furnished of steel or cast iron chilled and made in sections independently renewable.

The crusher is fitted with either band wheel driving pulleys or sheave wheels which are provided with counterweights on rim opposite the eccentric on the pitman shaft, to counterbalance the weight of the pitman. Each wheel is of sufficient size to transmit the power required by the crusher in the event that it is desired to transmit the power through one wheel only.

A very efficient forced feed oiling system has been provided, consisting of an oil pump, reservoir and filter, driven from one end of pitman shaft.

The pitman shaft bearings in the frame, as well as the pitman cap, are arranged with hollow chambers cast in same to form water jackets for the circulation of cooling water.

Particular attention has been given to such vital details as ease of adjustment and quick renewal of wearing parts, both of which are important factors, as they minimize the time of shutdowns.

Plate No. 12131 shows general and sectional views of the crusher and one can readily see that the machine is designed along the best lines and has a number of excellent features.

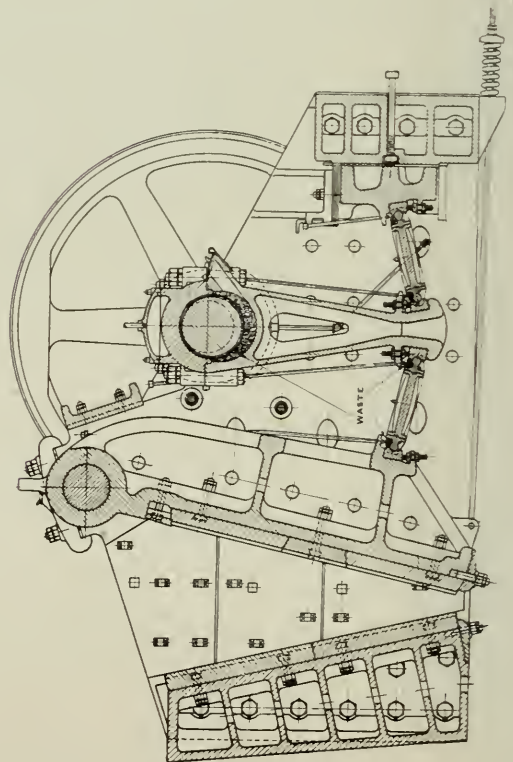
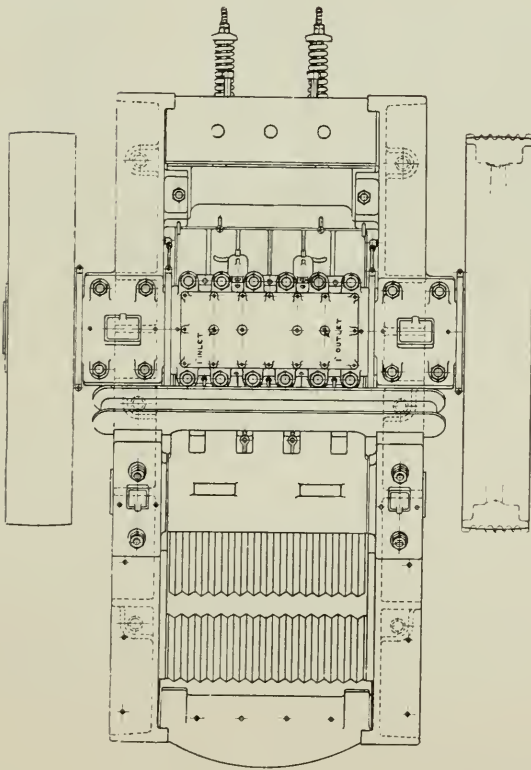
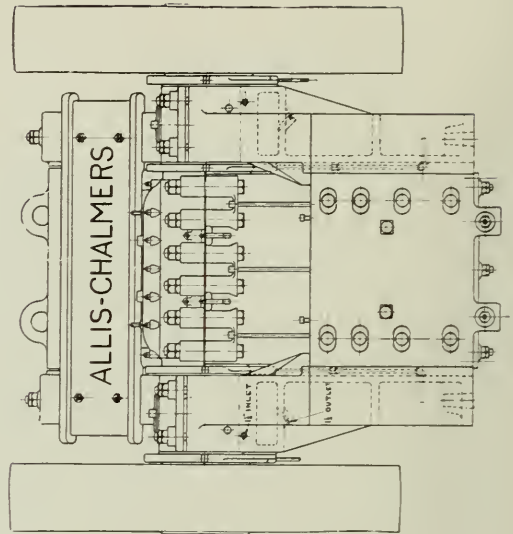
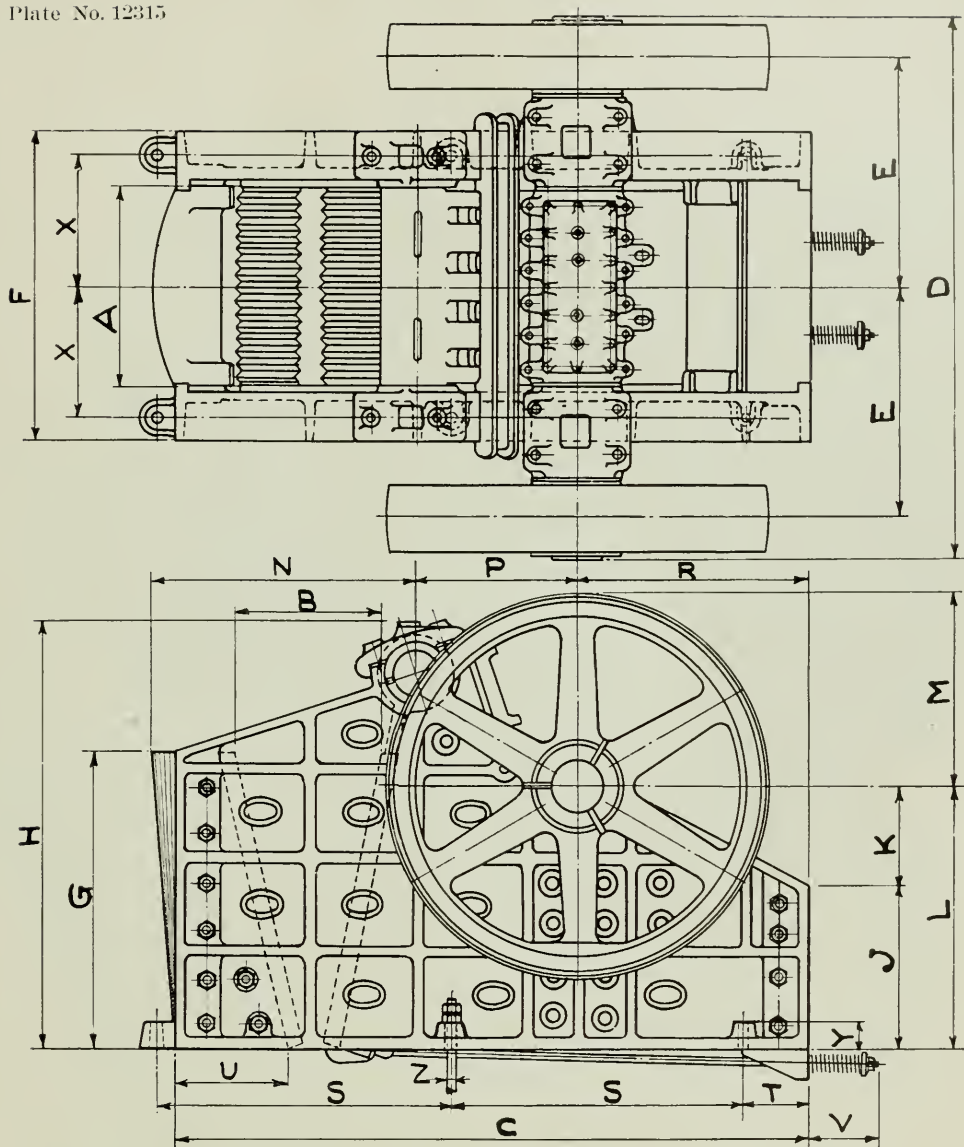


Plate No. 12131

JAW CRUSHERS

Plate No. 12315

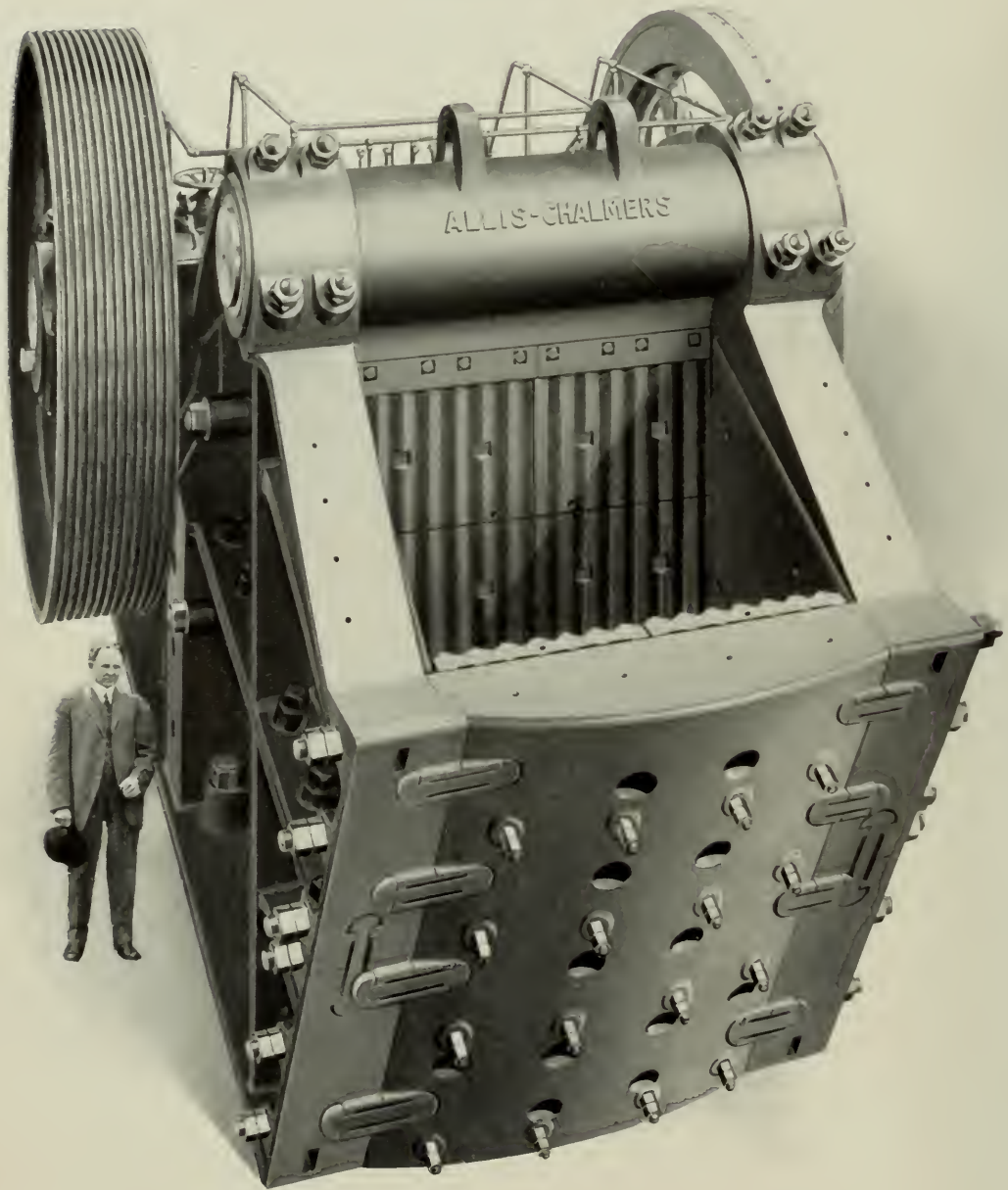


CLEARANCE DIMENSIONS

SIZE	A	B	C	D	E	F	G	H	J	K	L	M
36" x 24"	36"	24"	10'-7"	9'-3½"	3'-11"	3'-0½"	4'-4½"	6'-10"	2'-8½"	16½"	4'-1"	3'-3"
48" x 36"	48"	36"	13'-5¾"	12'-0"	5'-1"	6'-6½"	5'-9"	8'-7"	3'-4"	21"	5'-1"	4'-0"
60" x 48"	60"	48"	16'-6"	13'-6"	5'-9½"	7'-11½"	7'-8"	11'-2"	4'-2"	2'-8"	6'-10"	5'-0"

SIZE	N	P	R	S	T	U	V	X	Y	Z	Pulleys or Rope Sheaves
36" x 24"	4'-11½"	2'-10"	3'-11"	4'-9"	16½"	21¼"	11"	2'-11¼"	6¾"	2"	6'-6" x 14"
48" x 36"	5'-6¼"	3'-5"	4'-11½"	6'-3"	16½"	2'-5½"	23"	2'-8¾"	8"	2½"	8'-0" x 17"
60" x 48"	7'-0½"	4'-1½"	6'-0"	7'-8"	20"	2'-11"	23"	3'-4¼"	9"	3"	10'-0" x 21"

Plate No. 11505

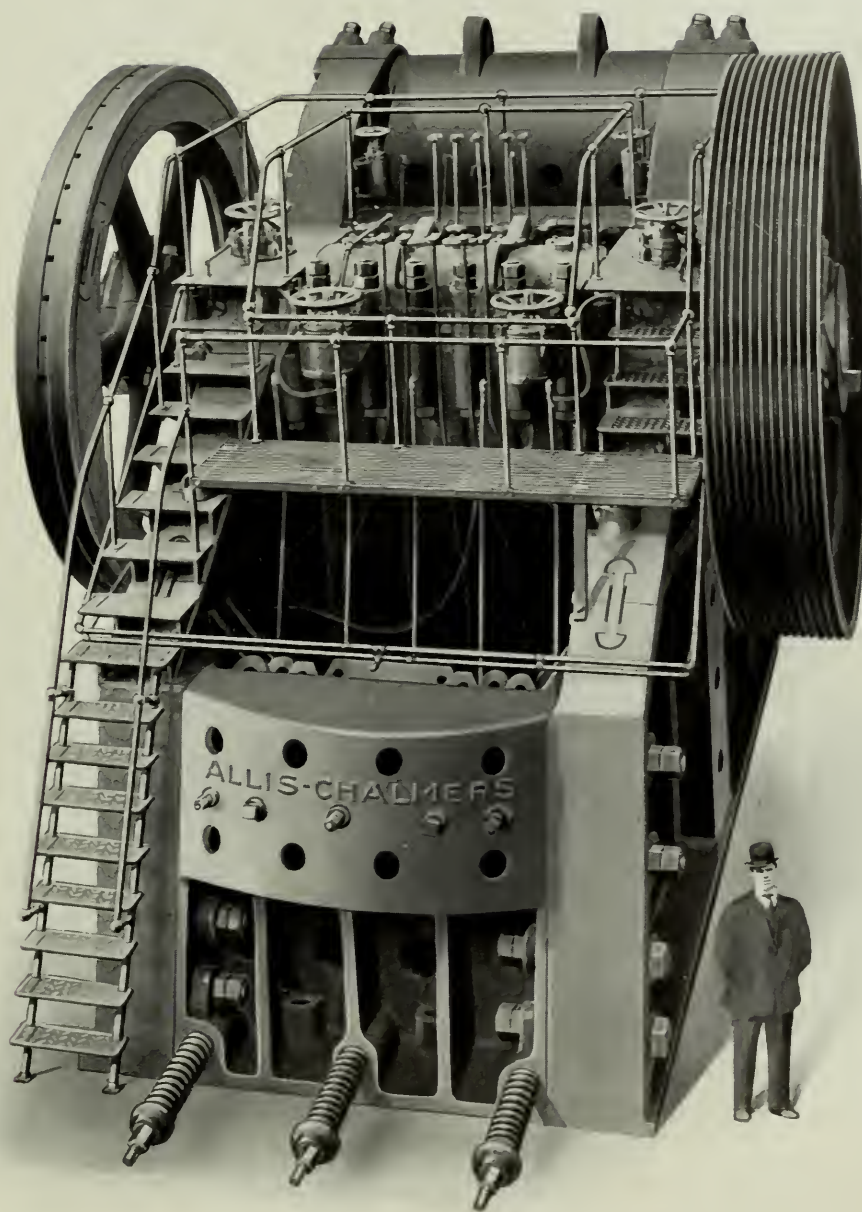


Front View

84" x 66" ALL STEEL JAW CRUSHER

JAW CRUSHERS

Plate No. 1093S



Rear View

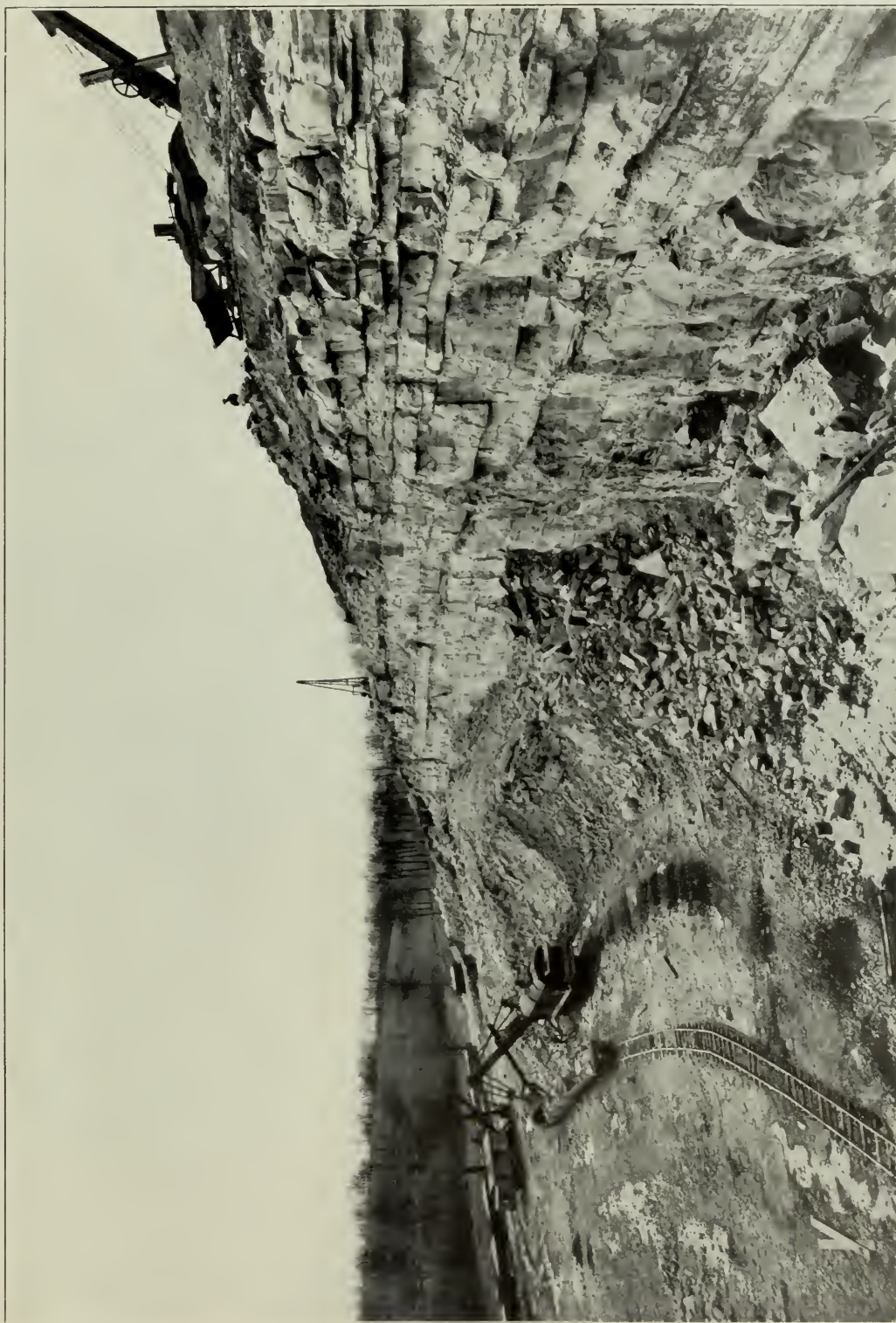
84" x 66" ALL STEEL JAW CRUSHER



A line of Jaw Crushers erected, ready for shipment. Our standard sizes range from 10' x 7" up to 81' x 63'.

JAW CRUSHERS

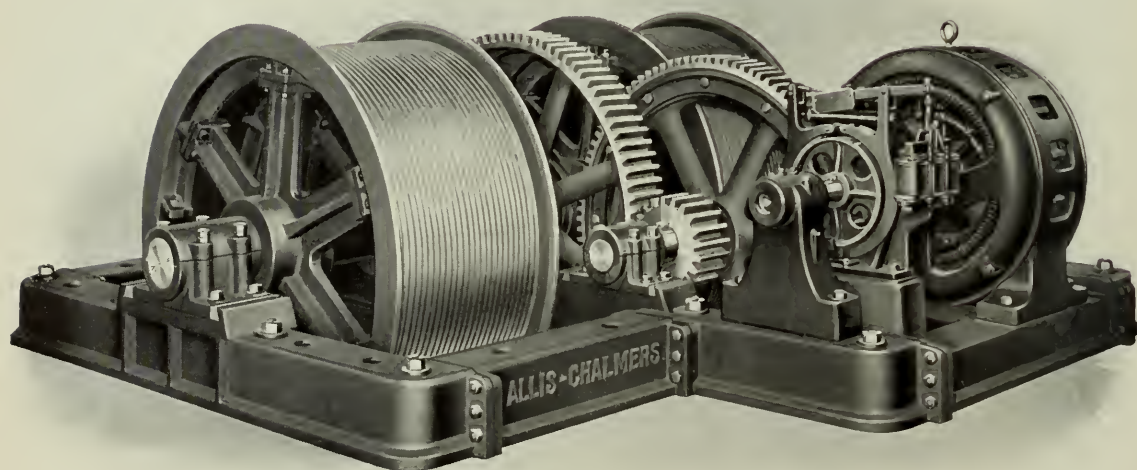
Plate No. 12218



Quarry Scene

ELECTRIC HOIST

Plate No. 10650



Double Drum Automatic Electric Hoist
For
ROCK CRUSHING PLANTS

Maximum rope pull 28,000 lbs. Rope speed 300 feet per minute. Driven by a 200 H. P., 440 volt, 60 cycle, 3 phase Induction Motor. Built for Casparis Stone Co. and others.

Allis-Chalmers Manufacturing Company's

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AGRICULTURAL MACHINERY

Farm Tractors

AIR BRAKES

AIR COMPRESSORS

Steam Driven
Belt Driven
Electrically Driven, Portable
Electrically Driven, Stationary
Hydraulic Driven

CEMENT MACHINERY

Ball Mills
Ball Tube Mills
Balls, Forged
Compeb Mills
Crushing Rolls
Elevators
Feeders
Gyratory Breakers
Hoists
Mixing Pans
Perforated Metals
Revolving Screens
Rotary Coolers and Dryers
Rotary Kilns
Tube Mills
Tube Mill Linings
Tube Mill Pebbles

COAL MINING MACHINERY

Barney Cars
Crushing Rolls
Hoisting Cages
Revolving Screens
Shaking Screens

CONDENSERS

Barometric
Jet
Surface

CRUSHING MACHINERY

Ballast Plants
Crushing Rolls
Dumping Skips
Elevators
Gyratory Breakers
Jaw Crushers
Macadam Plants
Perforated Metals
Portable Crushing Plants
Revolving Screens
Quarry Cars

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Blowing Engines
Corliss Engines
Diesel Oil Engines
Gas Engines
Rolling Mill Engines

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PERFORATED METALS

FLOUR MILL MACHINERY

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Bolters, Universal
Bolting Cloth
Bolting Cloth Cleaners
Bran and Shorts, Dusters
Bran Packers
Conveyors, Spiral
Corn Mills
Fans
Feed Mills
Feed Screens
Flour Dressers
Flaking Machines
Flour Feeders and Mixers
Flour Packers
Granulators
Purifiers
Reels
Rolls
Roller Mills
Rolling Screens
Scalpers

HOISTS

Electric Driven
Steam Driven

HYDRAULIC MACHINERY

Accessories
Francis Turbines
Impulse Wheels
Oil Pressure Governors
Pressure Regulators

MANGANESE BRONZE CASTINGS

MIXING MACHINERY

Amalgam Appliances
Ball Granulators
Chilian Mills
Concentrating Plants
Conveyors
Copper Converting Plants
Cyanide Plants
Elevators
Gold and Silver Mills
Gyratory Breakers
Huntington Mills
Jaw Crushers
Jigs
Lead Refining Plants
Mine Ventilating Machinery
Mortar Mills
Ore Buckets
Ore Feeders
Prospecting Mills
Roasting Furnaces
Sampling Plants
Skips
Smelting Machinery
Stamps, Atmospheric
Stamps, Gravity
Stamps, Steam
Tube Mills, Wet and Dry
Vanners

POWER TRANSMISSION MACHINERY

Belt Tighteners
Boxes
Couplings
Gears
Hangers
Pulleys
Rope Sheaves
Shafting

PUMPING MACHINERY

Centrifugal Pumps
Fire Service Pumps
Geared Pumps
"High Duty" Pumping Engines
Hydraulic Transmission Pumps
Screw Pumps

ROLLING MILL MACHINERY

SAW MILL MACHINERY

Band Mills, Double Cutting
Band Mills, Single Cutting
Band Mills, Telescopic
Band Re-saws, Horizontal
Band Re-saws, Vertical
Board Lifters, Steam
Cant Flippers, Steam
Canting Machine, Overhead
Carriages
Circular Saw Mills
Conveying Machinery
Cutting Off Saws, Steam Feed
Edgers
Edging Grinders
Feeds, Steam, Direct Acting
Feeds, Steam, Twin Engine
Filing Room Tools
Lath Mills and Bolters
Live Rolls and Drives
Log Chains
Log Jacks
Log Loaders
Log Turners
Niggers, Steam
Set Works
Slashers
Steam Feed Valves
Stock Lifters, Steam
Transfers
Trimmers

SUGAR MACHINERY

TIMBER TREATING AND PRESERVING MACHINERY

TURBINES—STEAM

TURBINES—WATER

ELECTRICAL APPARATUS

Alternating Current Generators and Motors

Belted Type Generators	Water-wheel Type Generators	Synchronous Motor-Generator Sets	Induction Motors
Engine Type Generators	Synchronous Frequency Changers	Induction Motor-Generator Sets	Transformers
Fly-wheel Type Generators	Induction Motor Frequency Changers	Synchronous Motors	Rotary Converters
Turbo Generators		Synchronous Condensers	

Direct Current Generators and Motors

Belted Type Generators	Small Bipolar and Multipolar Motors and Generators	Multiple Voltage Balancing Sets
Engine Type Generators	Electric Railway Equipments, Motors, Controllers, etc.	Multiple Voltage Variable Speed Equipments

Switchboards for Direct Current and Alternating Current

Allis-Chalmers Manufacturing Company

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